In the Claims (clean copy as amended)

1. (Amended) An integration and expression plastid vector for stably transforming a plastid genome of a higher plant species where plant growth is inhibited by an antibiotic-free phytotoxic agent, wherein said integration and expression plastid vector is contained in which comprises an expression cassette which comprises as operably joined components, a 5' end of a plastid DNA sequence inclusive of a spacer region, a promoter operative in said plastid genome, a DNA sequence encoding a detoxifying enzyme acting as a selectable marker, which is capable of detoxifying said phytotoxic agent in a cell to the corresponding nontoxic compound, at least one restriction site for the insertion of a heterologous target DNA sequence, a transcription termination region functional in said plastid, and a 3' end of a plastid DNA sequence inclusive of the spacer sequence.

2. The vector of claim 1 wherein a heterologous DNA sequence coding for a molecule of interest is inserted in one of the restriction sites.

3. The vector of claim 1 wherein said vector further comprises a ribosome binding site and a 5' untranslated region (5' UTR).

4. A vector of claim 1, wherein the antibiotic-free phytotoxic agent is a phytotoxic aldehyde and the detoxifying enzyme or protein is a aldehyde dehydrogenase capable of detoxifying said phytotoxic aldehyde.

5. (Amended) The chloroplast vector of claim 2 wherein the molecule of interest is a polypeptide.

6. (Amended) The chloroplast vector of claim 3, wherein said plastid is tobacco chloroplast.

7. A chloroplast vector which is described in Figure 1

8. (Amended) A vector of claim 4 for stably transforming the cholorplast genome where growth is inhibited by a phytotoxic aldehyde which is selected from the group consisting of acetaldehyde, formaldehyde, proprionaldehyde, butyraladehyde and betaine aldehyde

9. (Amended) An integration and expression plastid vector for stably transforming a plastid genome of higher plant species where plant growth is inhibited by betaine aldehyde wherein said integration and expression plastid vector comprises an expression cassette which comprises as operably joined components, a 5' tend of a plastid DNA sequence inclusive of a 16S-23S spacer sequence, a promoter operative in said plastid genome, a DNA sequence encoding betaine aldehyde dehydrogenase (BADH) as a selectable marker which is capable of detoxifying said betaine aldehyde in said cells to the corresponding non-toxic compound, a heterologous DNA sequence which codes for a molecule of interest, a transcription termination region functional in said plastid genome, and a 3' end of a plastid DNA sequence inclusive of the spacer sequence.

10. (Amended) A stably transformed plant which comprises a chloroplast which has been stably transformed with the vector or the progeny of the vector of Claim 9.

11. The stably transformed plant of claim 10, wherein the plant is a solanaceous plant edible for a mammal.

Cancel.

Cancel.

14. (Amended) The stably transformed plant of claim 10, wherein the plant is a monocotyledonous plant; selected from the group consisting of rice, wheat, grass, rye, barley, oat and maize.

15. (Amended) The stably transformed plant of claim 10, wherein the plant is a dicotyledonous plant; selected from the group consisting of soybean, peanut, grape, sweet potato, pea, canola, tobacco, tomato and cotton.

16. (Amended) The stably transformed plant of claim 10, wherein the plant is a tobacco, tomato, potato, rice, brassica, cotton, maize or soybean plant.

17. (Amended) The stably transformed plant of claim 10, wherein the plant is a homoplasmic plant.

18. (Amended) The vector of any one of claims 2-3, 5, 7 or 9, wherein the selectable marker is driven by a promoter in green and non-green tissues selected from the group consisting of the 16SrRNA promoter, the psbA promoter, the alpB promoter, or the accD promoter.

19. (Amended) A method for introducing into plastid genome of a plant cell a DNA sequence encoding for detoxifying enzyme, which method does not require selection for successful transformants by the detection of antibiotic resistance, said method comprising introducing into cells of a plant species whose growth is inhibited by an antibiotic-free phytotoxic agent, an expression cassette which comprises as operably linked

components, a 5' end of a plastid DNA sequence inclusive of a spacer sequence, a promoter operative in said plastid, a DNA sequence encoding a detoxifying enzyme acting as a selectable marker for transgenic plant cells and capable of detoxifying said phytotoxic agent in the cells to the corresponding nontoxic compound, a heterologous target DNA sequence, a transcription termination region functional in said plant chloroplast cells, and the 3' end of the plastid DNA sequence inclusive of a spacer sequence.

A4 cont.

20. (Amended) The method of claim 19 wherein the heterologous target DNA sequence codes for a molecule of interest.

21. (Amended) The method of claim 19 wherein the plastid DNA sequence codes for a phytotoxic aldehyde and the detoxifying enzyme or protein is a aldehyde dehydrogenase capable of detoxifying said phytotoxic aldehyde.

22. (Amended) The method of claim 19 wherein the phytotoxic aldehyde is selected from the group consisting of acetaldehyde, formaldehyde, proprionaldehyde, butyraldehyde and betaine aldehyde.

23. (Amended) A method of claim 19, wherein said method further comprises culturing said plant in a plant growth medium comprising said phytotoxic aldehyde, and selecting a plant cell that has had the DNA encoding sequence for a detoxifying enzyme introduced and hence is capable of growth in the presence of said phytotoxic aldehyde.

24. (Amended) The method of claim 23, wherein said method further comprises regenerating a transformed plant from said transformed plant cells.

25. (Amended) The method of claim 21 wherein said phytotoxic aldehyde and the

aldehyde dehyrodgenase is ,betaine aldehyde dehydrogenase (BADH).

26. (Amended) The method of claim 25, wherein said DNA sequence encoding a detoxifying enzyme is from sugar beet, or spinach plants.

27. (Amended) The method of claim 25, wherein said DNA sequence is from a microorganism, E.coli.

28. (Amended) The method of claim 19, wherein the promoter is selected from the group consisting of 16SrRNA, psbA, accD and alpB.

29. Cancel.

30. (Amended) The method of any one of claims 19-28, where the expression cassette further comprises a ribosome binding site (rbs) and a 5' untranslated region 5' UTR to enhance expression.

31. (New) An integration and expression plastid vector competent for stably transforming the tobacco plastid genome where growth is inhibited by betaine aldehyde, a phytotoxic aldehyde, which comprises an expression cassette which comprises as operably joined components, a 5' part of the plastid DNA sequence inclusive of a spacer sequence, a promoter operative in said plastid, a DNA sequence encoding spinach betaine aldehyde dehydrogenase (BADH) as a selectable marker which is capable of detoxifying said phytotoxic aldehyde in the cells to glycine betaine, a heterologous DNA sequence which codes for a molecule of interest, a transcription termination region functional in said tobacco plastid, and a 3' part of a plastid DNA sequence inclusive of the spacer sequence.